

SAMS Monograph

Comparing the OODA Loop's Effect on Operations at the Army Division and MAGTF Level

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Abstract

COMPARING THE OODA LOOP'S EFFECT ON OPERATIONS AT THE ARMY DIVISION AND MAGTF LEVEL by MAJ Alexander . Young, U.S. Army, 46 pages.

In the last ten years, the United States military has dealt with emerging counterinsurgencies in multiple operational theaters. To deal with the complex nature of counterinsurgency, organizational planning and operational processes increasingly focus on learning and adapting to a particular type of threat in a given environment. The developed processes help to increase the speed of the decision cycle in an attempt to retain the initiative and get the inside the insurgent's decision cycle. To do so, both the U.S. Army and U.S. Marine Corps interpret, doctrinally incorporate, and execute the influential ideas of John Boyd. Most importantly, the Observe-Orient-Decide-Act (OODA) loop concept informs decisions and actions and serves as a basis for command and control. The first study examines Coalition Joint Task Force-180 (CJTF-180), an Army Division operating in Eastern Afghanistan in 2003-2004. The second study examines I and II Marine Expeditionary Force (Forward), Marine Air-Ground Task Forces (MAGTF) operating in Al-Anbar Province, Iraq in 2006-2007. The monograph then compares the resulting patterns concerning task organization, tempo, and planning structure. The patterns of task organization for mission, decentralized command and control structure, and integrated planning driven by doctrine, increased the effectiveness of the MEF compared CJTF-180 in their respective area of operation.

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Misinterpretation has been the common fate of most prophets and thinkers in every sphere. Devout but uncomprehending disciples have been more damaging to the original conception than even its most prejudiced and purblind opponents.
– B.H. Hart, *Strategy*¹

To comprehend and cope with our environment we develop mental patterns or concepts of meaning. ... We destroy and create these patterns to permit us to both shape and be shaped by a changing environment. ... We cannot avoid this kind of activity if we intend to survive on our own terms.
– John R. Boyd, “Destruction and Creation”²

Introduction

In the last ten years, the United States military has dealt with emerging counterinsurgencies in multiple operational theaters. To deal with the complex nature of counterinsurgency, organizational planning and operational processes increasingly focus on learning and adapting to a particular type of threat in a given environment. The developed processes help to increase the speed of the decision cycle in an attempt to retain the initiative and get inside the insurgent’s decision cycle. To do so, both the U.S. Army and U.S. Marine Corps interpret, doctrinally incorporate, and execute the influential ideas of John Boyd. Most importantly, the Observe-Orient-Decide-Act (OODA) loop concept informs decisions and actions and serves as a basis for command and control. As David Lyle observes in a 2011 *Armed Forces Journal* article, “OODA is everywhere in our theory, doctrine, and force structure planning. It’s the theoretical foundation of our tactics, maneuver warfare concepts, and command and control concepts.”³

This monograph investigates the hypothesis that the simplification of Boyd’s OODA loop concept in Army doctrine and targeting methodology of Decide-Detect-Deliver-Assess (D3A)

¹ Basil Henry Liddell Hart, *Strategy*. 2nd ed. (London: New American Library, 1974), 339.

² John R. Boyd, “Destruction and Creation” (unpublished paper, 23 Mar 1976), 3.

³ David J. Lyle, “Looped Back In: We’ve Been Using the Wrong OODA Picture,” *Armed Forces Journal*, December 2011, 32.

distorts the true nature of the OODA loop, leading to neglect of the “orient” phase—the most critical step as identified by Boyd. Using targeting to drive the decision cycle leads to an approach that tries to reduce uncertainty through speed instead of tempo, preventing many organizations from getting inside the enemy decision cycle. While speed of execution is tantamount, hastening the orient phase in an attempt to get through the loop faster produces inaccurate results. In effect, Army organizations sometimes end up getting inside their own decision cycle.

Marine doctrine and organizations instead use the OODA loop as the main idea behind tempo and the foundation for command and control. Marine operations rely less on targeting methodology above the tactical level to drive the decision cycle. The task organization of a Marine Air-Ground Task Force (MAGTF) allows the MAGTF to employ integrated planning between subordinate elements more powerfully than Army equivalent units. Resulting Marine operations in counterinsurgency show more initiative and higher tempo relative to the enemy. Before looking further into the OODA loop process for each of the services in detail, we first need to look at how the services view John Boyd.

Coming out of the Vietnam War, the U.S. Army began a search for new doctrinal concepts to meet changing global threats. John Boyd is a pivotal figure in the emergence of scientifically inspired military thought that challenged the principles of cybernetic warfare.⁴ His influence on the resulting military doctrine and thinking on command and control evolved and continues into doctrine today, particularly in counterinsurgency operations. While he influenced Army doctrine in the 1980s, the first organization to directly credit and adopt his ideas into doctrine within the U.S. military was the Marine Corps. Boyd worked closely with the Marines in

⁴ Antoine Bousquet, *The Scientific Way of Warfare: Order and Chaos On the Battlefields of Modernity* (New York: Columbia University Press, 2009), 187.

the development of the Corps' 1989 manual, *Warfighting*.⁵ The current version of *Warfighting* discusses the OODA loop as the main idea behind the concept of tempo.⁶

The Army followed suit, incorporating the ideas of the OODA loop into staff decision cycle processes. Though the Army never codified the OODA loop in either *Operations* or *Counterinsurgency*, the underpinnings of the ideas exist in the doctrine. Army doctrine incorporates Boyd's ideas and provides models for targeting, command and control, and decision making. In *Mission Command* published in 2003, an entire annex is devoted to Boyd's OODA "cycle," describing the cycle as the basic sequence that occurs when commander's make decisions.⁷ The process, as presented in the doctrine, is cyclic; it begins with the start of an operation and continues until the end of the operation. The concept is that the organization serves to continuously collect information relative to the problem environment.⁸ Through this continuous collection of information, the organization can react faster than an opponent.

Boyd originally developed the OODA loop concept through a study of interactions between individual fighter pilots.⁹ Can the model provide utility when abstracted from the individual to the organization level? Boyd certainly believed so, stating that each level from simple to complex (platoon to theater) has their own OODA cycle.¹⁰ However, for an organization to effectively implement the OODA loop, they must first interpret the model correctly and limit the trap of oversimplification. Any further models that use the ideas of the OODA loop—such as the targeting methodology (Army) or Command and Control (Marine

⁵ Ibid., 187.

⁶ U.S. Marine Corps, MCDP 1, *Warfighting* (Washington, DC: Government Printing Office, June 1997), 102.

⁷ Department of the Army, FM 6-0, *Mission Command* (Washington, DC: Government Printing Office, August 2003), A-1.

⁸ Ibid.

⁹ John R. Boyd, "Patterns of Conflict," (Briefing – December 1986), 4-5.

¹⁰ Boyd, "Patterns of Conflict," (Briefing – December 1986), 72.

Corps)—must incorporate Boyd’s actual ideas behind the full OODA loop instead of the oversimplified version.

In developing the OODA loop concept, Boyd observed a tendency that exists within tactically focused military organizations to develop systems that attempt to account for all the factors of war. Boyd rejects such a total understanding of war and points to the incomplete nature of any framework or system that seeks total understanding. For the United States military, attempts at eliminating uncertainty in the operational environment represent an unachievable path. Furthermore, a false sense of understanding can prevent new information from entering, effectively closing the system. Invoking the second law of thermodynamics, Boyd posits that closed systems are subject to rising entropy as the mismatch between a changing environment and model increases. Boyd advocates taking apart existing frameworks and reconstructing new ones through “a cycle of destruction and creation repeated until we demonstrate internal consistency and match-up with reality.”¹¹

Boyd thus moves away from the traditional view of uncertainty as a threat that must be overcome. He embraces the idea that uncertainty cannot ever be fully reduced and might even be helpful. As Grant Hammond states, “Ambiguity is central to Boyd’s vision. It is not something to be feared but something that is a given. Being creative organisms, we should welcome it and make use of it.”¹² The challenge of dealing with uncertainty is particularly difficult at the division level in counterinsurgency operations. The division, while often tactical in nature, does practice operational art.

¹¹ John R. Boyd, “Destruction and Creation” (unpublished paper, 23 Mar 1976), 3.

¹² Grant T. Hammond, *The Mind of War: John Boyd and American Security* (New York: Smithsonian Books, 2004), 82.

For both Marine and Army organizations, the OODA loop seeks to model the decision making process an entity goes through when engaged in a war environment.¹³ As Boyd asserts, OODA represents a command and control loop.¹⁴ Author Antoine Bousquet describes the OODA loop as the following:

In the *observe* phase, the organization absorbs information from the environment. In the *orient* phase, the organization analyzes and interprets the information through processes to give meaning to the information and provide options to deal with the threat. In the *decision* phase, the organization commits to a course of action resulting in the action carried out in the *act* phase.¹⁵

Additionally, organizations receive new information during the process. Feedback loops between the phases allow organizations to process the new information requiring reorientation.

The *orient* phase then becomes the most important, but most difficult step to execute properly in the process. Orientation actually exerts “implicit guidance and control” over the other phases in addition to just shaping the decision phase.¹⁶ Therefore, the entire process is not really a sequential loop at all as phases might occur simultaneously and not necessarily in sequential order.¹⁷ The simplified version of the OODA loop presents the loop as a cycle, disconnecting the concept from many of its core ideas. The interpretation of the OODA loop into service doctrine is critical to the ultimate effect on service operations.

Section Outline

The first section includes a review of John Boyd’s main ideas as taken from three of his presentations from the 1970s and 1980s. Boyd never published a book, but the presentations provide the underpinnings of his key ideas on command and control, destruction and creation, and the OODA loop.

¹³ Bousquet, 188.

¹⁴ John R. Boyd, “Organic Design for Command and Control,” (Briefing – May 1987), 26.

¹⁵ Bousquet, 188.

¹⁶ Ibid.

¹⁷ John R. Boyd, “The Essence of Winning and Losing,” (Briefing – June 1995), 4.

Section two includes an overview of U.S. Army doctrine from the post-Vietnam period to the present and examines the influence of Boyd's ideas on the capstone operations manuals to include operations, targeting, counterinsurgency, and planning doctrine.

Section three examines the implementation of U.S. Army doctrine and the resulting command and control process in counterinsurgency operations at the division level. As an example of the influence of the OODA loop on a division level operation in Afghanistan, we look to Combined Joint Task Force 180 (CJTF-180), a division level unit operating in eastern Afghanistan in 2003-2004. The three processes from Army targeting doctrine of Decide-Detect-Deliver-Assess (D3A), Find-Fix, Track-Target-Engage-Assess (F2T2EA), and Find-Fix-Finish-Exploit-Analyze-Disseminate (F3EAD) provide the framework for examining effects.

Section four includes an overview of U.S. Marine Corps' doctrine from 1989 to the present and examines the influence of Boyd's ideas on the capstone operations manuals to include targeting, command and control, and planning doctrine.

Section five draws on a study of the command and control process for two consecutive Marine Expeditionary Forces (Forward) in Al-Anbar Province, Iraq from 2006 to 2008. The study examines the command and control and targeting processes in a similar method as section three.

Section six compares the service approaches and examines whether the services incorporate Boyd's ideas differently—both in doctrine and practice—revealing strengths and weaknesses in the different service approaches. Comparing the respective battle rhythms for the time relationship of each part of the cycle reveals systemic features that allow for either open or closed feedback systems. Through comparison, broad patterns emerge showing the differences in service approach.

John Boyd's Ideas

This section presents a review of John Boyd's main ideas progressing towards the OODA loop. The examined presentations cover the ideas of destruction and creation, command and

control, the OODA loop, and command and control. The section presents the ideas chronologically, presenting context and discussing each of Boyd's main ideas as he developed them to better illustrate the progression towards the OODA loop.

While in his first command assignment in Thailand in support of U.S. special operations in Vietnam, Boyd began to expand his earlier work on air to air combat to a broader search for the nature of creativity.¹⁸ Shortly after returning from Thailand in August of 1974, Boyd submitted a report to the Air Force that explains that in combat individuals must "orient themselves so they can understand the situation, make a decision to direct their activities, and take action."¹⁹ The report is Boyd's first use of the terms that would eventually define the OODA loop. After his initial report, Boyd began producing other reports and presentations expanding on his new ideas.

Destruction and Creation

To appreciate Boyd's theories fully, one must begin with an examination of his 1976 originating document entitled *Destruction and Creation*. Here, Boyd lays the foundation for all of his subsequent ideas and theories on warfare. Boyd begins it all with a reflection on human behavior and an assertion that "actions taken as individuals are closely related to survival."²⁰ Though a basic premise, the statement leads to his idea that in an attempt to better survive, an individual or group seeks to "improve their capacity for independent action."²¹ To achieve independent action, decisions are fundamentally important. He states that "to make timely decisions one must be able to form mental concepts of observed reality, as we perceive it, and be able to change these concepts as reality itself appears to change. The concepts can then be used as

¹⁸ Robert Coram, *Boyd: The Fighter Pilot Who Changed the Art of War* (Boston: Little, Brown, and Company, 2002), 271.

¹⁹ Ibid., 301.

²⁰ Boyd, "Destruction and Creation," 1.

²¹ Ibid.

decision-models for improving one's capacity for independent action."²² Boyd then proposes two ways to manipulate mental concepts to represent observed reality.

To manipulate mental concepts to an observed reality, one can start with the whole and break down into particulars (general to specific), or start with particulars and build towards a whole (specific to general). The former uses a deductive method, while the latter an inductive one. According to Boyd, the two opposing methods form the basic processes for systematically dealing with the environment.²³ Boyd does not advocate exclusive use of either an inductive or a deductive method, a deviation from other systems theories of the time. To represent the two methods, Boyd introduces the terms destruction and creation.

Boyd believes that an organization's objective should be to act in a manner which impairs the enemy's ability to see reality (destruction) by breaking the whole into its particulars before the enemy can re-orient his observations. Tempo relative to the enemy determines whether the enemy can then combine particulars back into the whole (creation). The process is similar for the friendly side. Destruction becomes a necessity in order for the creation of a new perspective for the organization. In other words, the opponent that executes faster and can more accurately orient new observations wins. The process occurs over and over again to deal with changing systems. Mismatches invariably occur between new observations and the existing system, and the processes of active destruction and creation address the gap. Though not phrased as orientation, *Destruction and Creation* clearly shows the underpinnings to the OODA loop concept.

Patterns of Conflict

In 1986, Boyd presented the first of his *Discourses on Winning and Losing*; a presentation entitled *Patterns of Conflict*. His stated goal is to "unveil the character of conflict,

²² Ibid., 1-2.

²³ Boyd, "Destruction and Creation," 2.

survival, and conquest.”²⁴ It is in this presentation where Boyd formally introduces the origins of the OODA loop—presenting it as a way to represent air to air combat. The example clearly shows the crucial importance of using tempo relative to the enemy instead of just speed of execution. Tempo leads to one getting inside the OODA loop of the enemy to achieve tactical paralysis. He emphasizes that, “such activities will make us appear ambiguous thereby generating confusion and disorder among our adversaries—since our adversaries will be unable to generate mental images or pictures that agree with the menacing as well as faster transient rhythm or patterns they are competing against.”²⁵ He then expands the OODA loop from the individual to the organizational level. By doing so, he gives us a glimpse into his vision of how military organizations could operationalize the theory.

The crucial ideas behind the OODA loop include the generation and management of tempo. While seemingly obvious on the surface, some question the utility of the OODA loop as a means for generating tempo in large, complex organizations as such a simple model cannot account for such complexity. In response, Boyd states that the time needed to complete an OODA cycle indeed does increase with each ascending level in the organizational hierarchy as the number of events to consider correspondingly increases. Consequently, subordinate levels must nest their work within the higher organization’s slower rhythm and larger pattern to maintain consistency in the system. Higher headquarters must then “give lower commanders wide freedom, within the overall scheme to shape and direct their own activities so that they can exploit faster tempo/rhythm at tactical levels.”²⁶

Boyd’s idea of management of tempo can be very easily misunderstood and misapplied. He argues that most military theories miss the whole idea behind tempo as the basis to understand

²⁴ John R. Boyd, “Patterns of Conflict,” (Briefing – December 1986), 2.

²⁵ Ibid., 6.

²⁶ Ibid., 73.

and adapt to the environment. Tempo does not only mean organizational speed of execution. Tempo must take into account what he terms the “organic” elements defined as variety, rapidity, harmony, and initiative.²⁷ These elements improve the ability for an organization to reduce their own “friction” while maximizing that of the opponent, ultimately aiming to reduce his ability to resist. The organic elements figure prominently in the third and final Boyd work examined for this monograph, *Organic Design for Command and Control*.

Organic Design for Command and Control

In 1987, Boyd completed the next of his *Discourses on Winning and Losing*; a presentation entitled *Organic Design for Command Control*. Given the rapid explosion of technology of the period, Boyd looks at the effect on command and control. He argues that command and control is a human, rather than a technological endeavor, and those that rely too much on technology risk overshadowing the human aspect. The organic elements of command and control, defined earlier as variety, rapidity, harmony, and initiative, need to be the focus of the system. The lack of variety and rapidity leads to a rigid, predictable and non-adaptable organization.²⁸ The lack of harmony and initiative leads to confusion, disorder, and ultimately chaos.²⁹ The *orientation* phase of the OODA loop realizes these elements.

As discussed in the monograph introduction, Boyd considers the orientation phase to be the most critical of the entire process, stating “without orientation there is no command and control worthy of the name. Orientation shapes the way we interact with the environment.”³⁰ Proper organizational orientation enables a common understanding of operational situations and enables subordinate organizations to maximize use of the organic elements of variety and

²⁷ Ibid., 12.

²⁸ Boyd, “Organic Design for Command and Control,” (Briefing – May 1987), 9.

²⁹ Ibid.

³⁰ Boyd, “Organic Design for Command and Control,” (Briefing – May 1987), 16, 25.

initiative. Common understanding between echelons based on proper orientation also enables trust and harmony leading to what Boyd calls Implicit Orientation. The concept of implicit orientation is important as it becomes the central idea of Boyd's command and control system.

Implicit Orientation allows commanders and their subordinates to: Diminish their friction and reduce time, thereby permit them to: Exploit variety/rapidity while maintaining harmony/initiative, thereby permit them to: Get inside an adversary's O-O-D-A loops, thereby: Magnify an adversary's friction and stretch-out his time for a favorable mismatch in friction and time, thereby: Deny an adversary the opportunity to cope with events/efforts as they unfold.³¹

Boyd's Influence on U.S. Army Doctrine

The following section provides an overview of Boyd's influence on U.S. Army doctrine beginning with AirLand Battle in the wake of Active Defense following the Vietnam War. The doctrine is examined in detail through the lens of the still ongoing debate on how much influence the "maneuverists" really had on the emerging doctrine.³² The section then examines Boyd's own evolving ideas—specifically the OODA loop in the mid 1980's—and the incorporation into emerging Army doctrine up to and including targeting and counterinsurgency doctrine. Boyd's ideas influence capstone doctrine (and their predecessors) including operations (FM 3-0), mission command (FM 6-0), counterinsurgency (FM 3-24), targeting (FM 3-60), and planning (FM 5-0).

Before looking at Boyd's influence on U.S. Army doctrine, understanding how Boyd himself viewed doctrine proves useful. To start, Boyd asserted that no current U.S. doctrine of any service ever appears in his personal work.³³ His belief that doctrine quickly morphs into

³¹ Ibid., 23.

³² Saul Bronfeld, "Did TRADOC Outmanoeuvre the Manoeuvrists? A Comment," *War & Society*, 27 October 2008, 111.

³³ "John Boyd on doctrine." 2008. YouTube. Flash video file. http://www.youtube.com/watch?v=heWpHSOMAmY&feature=youtube_gdata_player (Accessed December 27, 2011).

dogma dissuaded him from incorporating doctrine for fear of dogma affecting his work.³⁴ He states that the best way to view doctrine is to understand that it probably isn't right and then to read all of it—to include other countries'—to avoid being captured and subservient to any one doctrine.³⁵ Boyd's negative views on doctrine attracted the attention of the growing group who wanted a new doctrine that focused on maneuver.

The group especially criticized doctrine emerging during the immediate post-Vietnam period resulting in a scathing critique that attracted quite a bit of attention in the defense community. Boyd and his acolytes were dubbed by William Lind—a fellow maneuverist—as the “Reformers.”³⁶ The reformers publically criticized Active Defense and attempted to influence the future doctrine.³⁷ They questioned the Army's capability of executing the doctrine considering the requirement for continuous command and control, and argued that the shortage of reserve made Active Defense a technique that permitted no mistakes of execution.³⁸ The doctrine led to organizations unable to generate and manage tempo.

General Donn Starry, the TRADOC commander presiding over Active Defense in 1978, acknowledged many of the criticisms of Active Defense. However, he maintained that the Army could fix the deficiencies through proper training, employing skill qualifications, and instituting an Army Training and Evaluation Program (ARTEP).³⁹ Starry's solutions failed to satisfy the critics who continued the criticism unabated. In 1979, the newly designated Army Chief of Staff, General Edward Meyer, deemed the doctrine too European focused and not comprehensive

³⁴ Ibid.

³⁵ Ibid.

³⁶ Coram, 331.

³⁷ Ibid., 351.

³⁸ Richard M. Swain, “Filling the Void: The Operational Art and the U.S. Army,” *Operational Art: Developments in the Theory of War*, edited by B.J.C. McKercher and Michael Hennessy (1996): 379.

³⁹ Ibid., 380.

enough for capstone doctrine.⁴⁰ The additional criticism—similar in nature to that of the reformers—finally brought about the decision to revise the capstone operations manual. With the institutional shift in focus, the Boyd and the reformers attempted to influence the new doctrine. At this point, Boyd’s emerging ideas began to influence capstone doctrine including operations, mission command, counterinsurgency, targeting, and planning.

Operations

Some debate exists as to the reformer’s impact on the concept of AirLand Battle doctrine.⁴¹ Among the strategists cited in the bibliography, the 1982 FM 100-5 *Operations* acknowledges only one of the so-called maneuverists, B.H Liddell Hart.⁴² Not only are the other reformers not cited, the proposed concepts and explanations do not seem to be influenced directly by any of the recent work of the reformers. Though Boyd had only published one essay, drafts of “Patterns of Conflict” circulated in military circles as early as 1977 and his ideas were probably known to General Starry and the other authors of the 1982 manual. Curiously, the concept of “orientation” (in the Boydian sense) does not appear and no mention of the “enemy decision cycle” appears in the manual. Starry never publically acknowledged the reformers either.⁴³

Author Saul Bronfield, in his article “TRADOC and the Manoeuvrists,” argues that while the 1982 manual employs maneuver warfare, the doctrine writers interpret maneuver warfare differently from the reformers.⁴⁴ While a review of the 1982 version of the manual does not directly incorporate any of Boyd’s ideas, Boyd and the other reformers still influenced the shift in approach through exposing the inherent weaknesses of active defense and calling for a new

⁴⁰ Ibid.

⁴¹ Bronfeld, 112.

⁴² Department of the Army, FM 100-5, *Operations* (Washington, DC: Government Printing Office, 1982), Appendix A-3.

⁴³ Bronfeld, 113.

⁴⁴ Ibid.

doctrine. As Boyd's works became better known, a study of the revised *Operations* in the 1986 and 1993 versions reveals Boyd's influence on Army doctrine.

In contrast to the 1982 version, the subsequent versions of *Operations* incorporate both Boyd's specific terminology and many of his ideas. The 1986 version stresses that "anticipation and foresight are critical to turning inside the enemy's decision cycle and maintaining the initiative."⁴⁵ The doctrine also mentions the friendly decision cycle, stressing the "decisive importance" of contingency plans as "they shorten the friendly decision cycle and may allow the large unit commander to act faster than his opponent."⁴⁶ The ideas of getting inside the enemy's decision cycle and shortening the friendly decision cycle represent two of the critical ideas behind the OODA loop. Boyd presents these ideas in the years between the 1982 and 1986 manuals leaving little question as to their origin. One interesting factor here is that Boyd did not publish the full OODA loop seen in figure 1 until 1995, years after doctrinal incorporation of the ideas of OODA loop into Army doctrine.⁴⁷ Without the full OODA loop to use as a foundation, the doctrine oversimplified the concept. As will be discussed later, the Marine Corps worked with Boyd directly in its 1989 manual *Warfighting*,⁴⁸ mitigating the possibility of misinterpretation and oversimplification.

⁴⁵ FM 100-5, *Operations*, 23.

⁴⁶ *Ibid.*, 31.

⁴⁷ John R. Boyd, "The Essence of Winning and Losing," (Briefing – June 1995), 4.

⁴⁸ U.S. Marine Corps, *Warfighting*, 102.

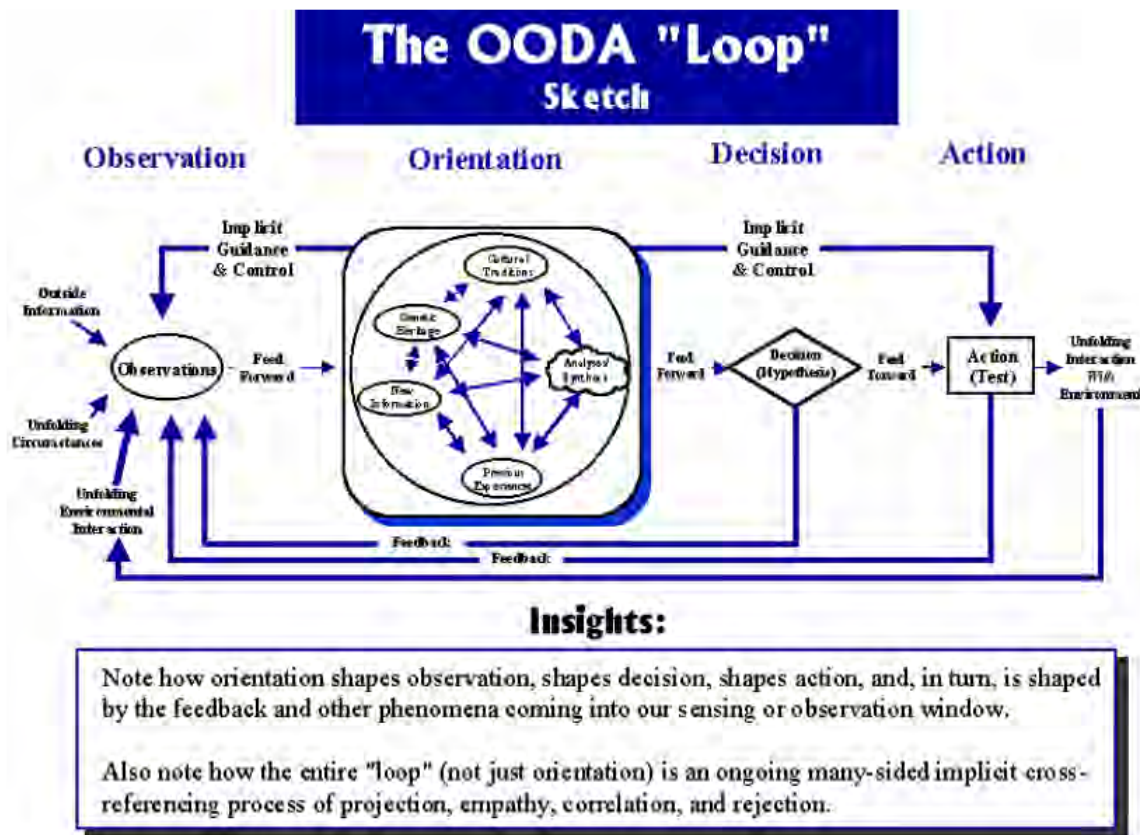


Figure 1: Full OODA loop⁴⁹

The 1993 revision of *Operations* continues incorporating more Boyd terminology and ideas —though still fails to acknowledge Boyd. The manual drops the AirLand Battle concept, and focuses on the importance of using forms of maneuver to “orient on the enemy, not terrain.”⁵⁰ The resulting orientation informs operational judgment based on the commander’s objectives.⁵¹ The manual also presents the challenges across a wide spectrum of conflict to include low-intensity fights.⁵² Boyd’s OODA loop concept becomes even more important and relevant when dealing with unknown threats across a spectrum of conflict. The next doctrinal evolution in 2001,

⁴⁹ Ibid.

⁵⁰ FM 100-5, *Operations*, 7-11.

⁵¹ Ibid.

⁵² Ibid., 1-5.

re-labeled as FM 3-0, introduces a new operating concept called Full Spectrum Operations. The 2008 version of *Operations* states that “operations in depth can disrupt the enemy’s decision cycle,” and that “these operations contribute to protecting the force by destroying enemy capabilities before the enemy can use them.”⁵³ The concept of tempo—heavily advocated by Boyd in the OODA loop concept—appears more than forty times in the manual, twice the amount of the 1993 manual, and more than the seven references in the 1986 manual.

Mission Command

In the Army doctrine examined for this monograph, only Appendix A of *Mission Command* directly references Boyd’s OODA loop.⁵⁴ The OODA cycle, as presented in doctrine, is continuous rather than sequential. The organization serves to continuously collect information relative to the problem environment. Through this continuous collection of information, the organization can react faster than an opponent. The manual includes a passage that states that “the important lesson of the OODA cycle is to generate tempo by shortening the time needed to plan, prepare, and execute. It is not the absolute speed that matters, but speed relative to the enemy.”⁵⁵ The manual discusses the need to use time more effectively than the enemy and stresses the need for commanders to provide timely information to lower levels to allow for the exercise of initiative.⁵⁶ The manual correctly interprets and includes Boyd’s central idea of tempo.

Despite highlighting the importance of tempo, the manual fails to incorporate Boyd’s ideas about the nesting of subordinate organization’s OODA cycle. The manual emphasizes the sequential nature of subordinate OODA cycles stating that “in land operations, commanders at each level must execute the OODA cycle before the force as a whole responds to an order from

⁵³ FM 3-0, *Operations*, 6-85.

⁵⁴ FM 6-0, *Mission Command*, A-1.

⁵⁵ Ibid., A-2.

⁵⁶ Ibid., 1-12.

the overall force commander.”⁵⁷ As shown later, the use of sequential instead of parallel planning affects Army operations.

Targeting

As defined in *The Targeting Process*, targeting is the process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities.⁵⁸ The targeting process is continuous and crucial to the synchronization of combat power. Targeting products include the high-payoff target list (HPTL), target selection standards matrix, attack guidance matrix (AGM), and target synchronization matrix.⁵⁹ The decide, detect, deliver, and assess (D3A) methodology represents the primary targeting methodology and is shown in figure 2.

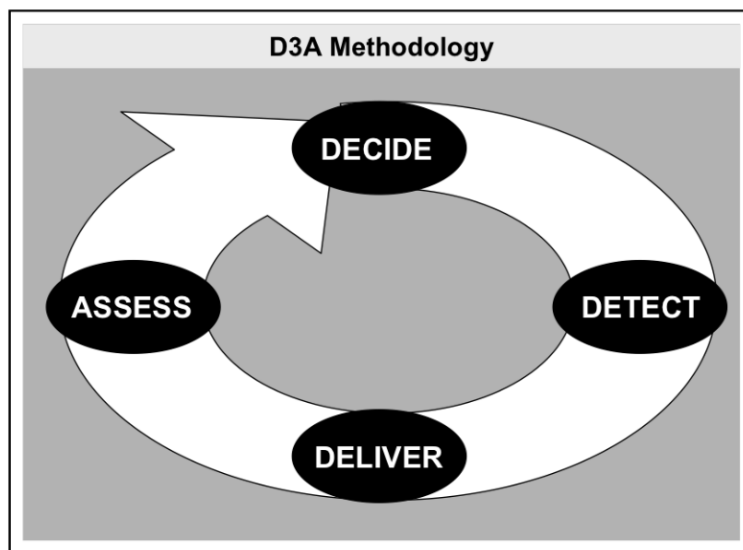


Figure 2: D3A Methodology⁶⁰

⁵⁷ Ibid., A-3.

⁵⁸ Department of the Army, FM 3-60, *The Targeting Process*, (Washington, DC: Government Printing Office, November 2010), 1-1.

⁵⁹ Ibid., D-1.

⁶⁰ Ibid., 2-1.

The D3A methodology doctrinally fits with the Army's Military Decision Making Process (MDMP) approach.⁶¹ The Army outlines its problem solving and decision-making doctrine in *The Operations Process*, Appendix B.⁶² In this manual, the Army provides a starting point for problem solvers and decision makers to use in assessing problems. The MDMP incorporates a systematic approach to defining a problem, developing courses of action to solve the problem, select a course of action, and produce an order based on the course of action.

Figure 3 illustrates the doctrinal relationship between the D3A methodology and the MDMP process.⁶³ The key products from the *decide* function include target value analysis and the intelligence estimate. The *decide* function gives a clear picture of the priorities that apply to tasking of target acquisition, information processing, selection of attacks means, and target sets. A lack of orientation exists within the D3A methodology; not enough time is given to the information coming in to develop meaning.

⁶¹ Ibid., 1-7.

⁶² Department of the Army, FM 5-0, *The Operations Process*, (Washington, DC: Government Printing Office, March 2010), Appendix B.

⁶³ FM 3-60, *The Targeting Process*, 1-13.

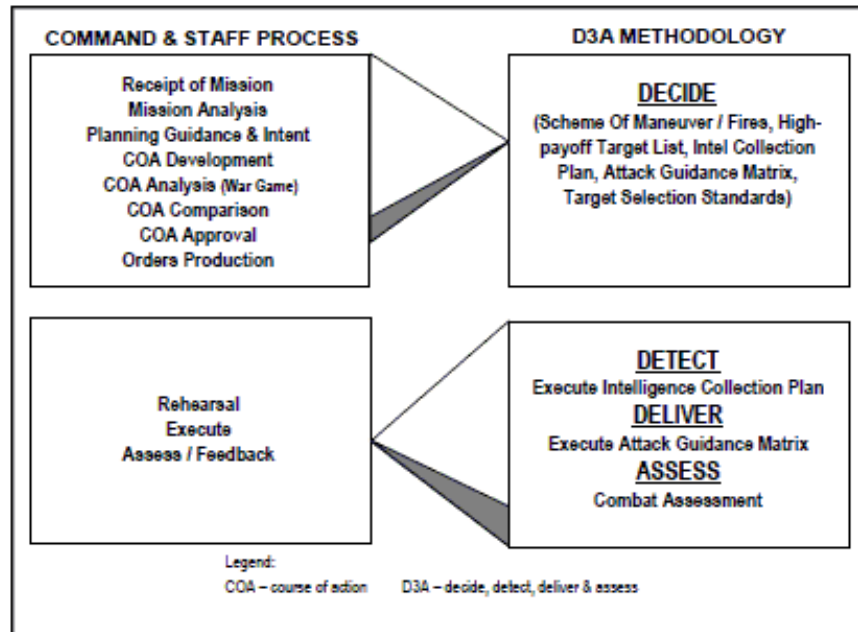


Figure 3: D3A Methodology and the MDMP⁶⁴

With a well-structured problem, clear mission statement, and higher commander's intent, MDMP is a sufficient problem solving process. The negative side of this model is that it is time and labor intensive, and does not allow for further growth of the problem environment as the environment changes. The model is also very process oriented and can often be difficult to incorporate and adjust to new information during the process. When faced with ill-structured problems during full spectrum operations, the D3A falls short in providing a methodology to understand the operational environment.

To deal with full spectrum operations, find, fix, finish, exploit, analyze, and disseminate (F3EAD) provides maneuver leaders with a methodology that enables them to organize resources, array forces, and target high value individuals (HVI).⁶⁵ F3EAD is not a replacement for D3A, but

⁶⁴ Ibid.

⁶⁵ Ibid., B-1.

allows for a better understanding of the operational environment and provides a great tool for short suspense targets. Figure 4 displays how F3EAD fits with D3A.⁶⁶

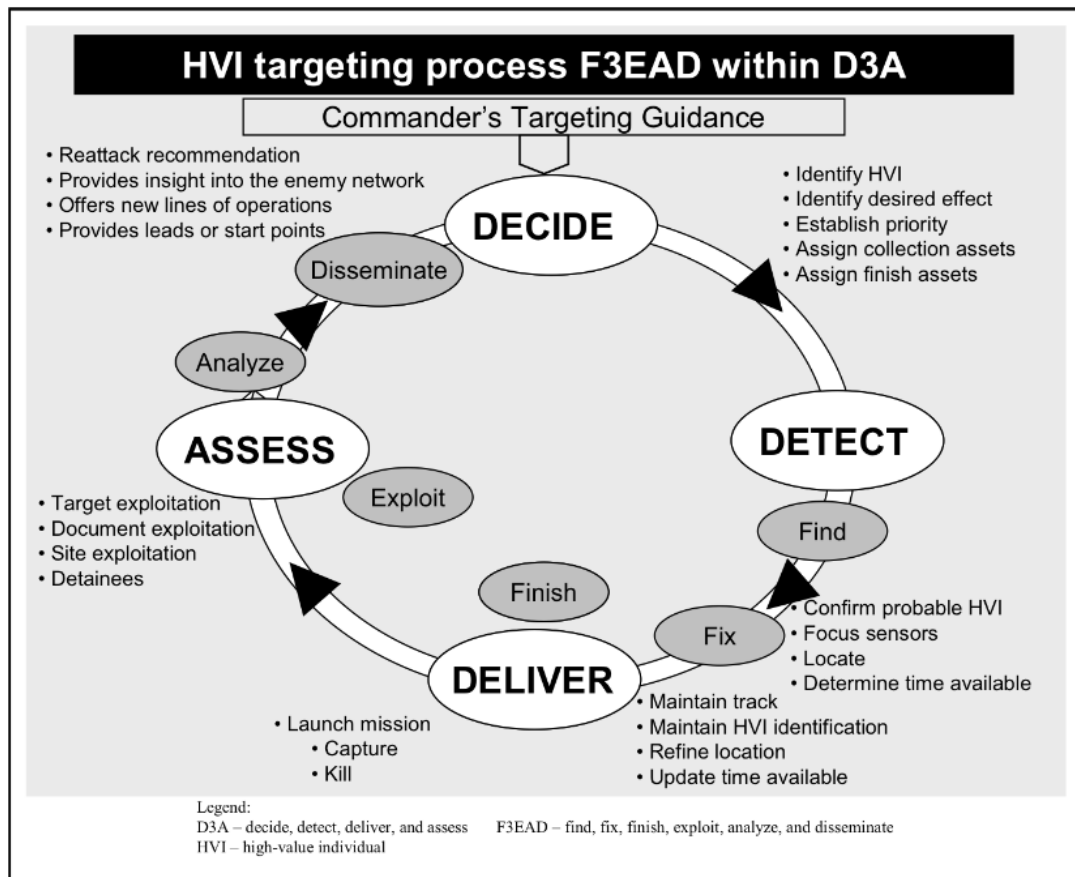


Figure 4: F3EAD within D3A⁶⁷

The D3A methodology contains many of the steps of the simplified OODA loop with the exception of orientation. Without using the Boyd's full OODA loop shown earlier, one could confuse the orient step with assess though a closer look reveals that the two are completely different. Furthermore, D3A by definition is sequential while the OODA loop—as defined by Boyd and in *Mission Command* doctrine—is continuous.

⁶⁶ Ibid., B-2.

⁶⁷ Ibid., B-2.

Counterinsurgency

Counterinsurgency avoids using the terms friendly or enemy decision cycle. To achieve the logical lines of operation (LLOs), the manual states that “commanders and staffs use the targeting process to achieve effects that support the LLOs in a counterinsurgency (COIN) campaign plan.”⁶⁸ The targeting process becomes the framework for targeting people (both insurgents and noncombatants) and constitutes the activities of D3A: decide which targets to engage, detect the targets, deliver (conduct the operation), and assess the effects of the operation. The next section examines the effect of using the targeting framework to achieve effects that support LLOs.

Boyd’s Impact on Army Division Operations – CJTF-180

This section covers the dramatic shift in command structure and campaign direction in Afghanistan in 2003 beginning with the restructuring of the Command Joint Task Force-180 (CJTF-180) from a corps level command to a division level command and continues through the establishment of the Combined Forces Command-Afghanistan in the fall of 2003. The discussion focuses on the insurgent enemy that began to coalesce in 2003 and the command’s orientation and counterinsurgency approach. To understand the challenges facing CJTF-180 at the time of their restructuring, a look at the history and context of the task force proves useful.

Over the previous year, CJTF-180 focused on decisive combat operations (Phase III) aimed at destroying Taliban and al-Qaeda remnants.⁶⁹ But Lieutenant General Dan McNeill, the commander of CJTF-180, envisioned a transition to the next phase—humanitarian assistance and support to the new Afghan Government—by the middle of the summer. On 1 May 2003 Secretary

⁶⁸ Department of the Army, FM 3-24, *Counterinsurgency* (Washington, DC: Government Printing Office, December 2006), 5-29.

⁶⁹ Donald P. Wright and Martin Dempsey, *A Different Kind of War: The United States Army in Operation Enduring Freedom, October 2001 – September 2005* (Fort Leavenworth, KS, 2010), 237.

of Defense (SECDEF) Donald Rumsfeld reinforced this idea by traveling to Kabul and declaring that security levels in Afghanistan were such that a more formal transition to the next phase of the campaign could occur.

A few weeks after the SECDEF's statement, McNeill and the bulk of his CJTF-180 staff from the US Army's XVIII Airborne Corps departed Afghanistan. Central Command (CENTCOM) downsized the command to a division headquarters. Beginning in May 2003, the 10th Mountain Division headquarters deployed to replace departing forces and in the summer formed the new CJTF-180 staff under Major General John R. Vines. The changes significantly reduced the size and capacity of the senior military command in Afghanistan. As the new headquarters assumed responsibilities, enemy attacks increased in frequency as did violence focused on Afghan civilians, Afghan security forces, and representatives of international organizations and nongovernment organizations (NGOs).⁷⁰ The division's first month produced one of the most deadly months since Operation Enduring Freedom (OEF) began with more than 200 Afghan soldiers and civilians killed by Taliban forces.⁷¹

In addition to the tactical fight, the division retained the higher-level duties previously handled by the corps such as directing the Combined Joint Civil Military Operations Task Force (CJCMOTF) and the Afghan National Army (ANA) training program.⁷² Vines also worked closely with the American Special Envoy to Afghanistan and met regularly with Afghan political officials. Handling strategic responsibilities within a deteriorating tactical environment proved overwhelming for the division staff.

⁷⁰ Seth G. Jones, *Establishing Law and Order After Conflict* (Santa Monica, CA: Rand Publishing, 2005), 91.

⁷¹ Ahmed Rashid, *Descent into Chaos: the U.S. and the Disaster in Pakistan, Afghanistan, and Central Asia* (New York, NY: Penguin Books, 2009), 237.

⁷² Wright, 239.

As the situation grew worse, CENTCOM began to view the CJTF-180 staff as too small to adequately handle affairs at the high operational and theater strategic level.⁷³ Afghanistan was at a transition and a division headquarters proved too small to handle the transition.⁷⁴ A new headquarters dedicated to working at these levels would give the Afghan Government the attention and support it required and would free CJTF-180 to focus on security and reconstruction. To address the gap, CENTCOM created a new senior military headquarters called Combined Forces Command-Afghanistan (CFC-A) with Lieutenant General David Barno in command, assuming overall responsibility for U.S. military operations in Afghanistan.⁷⁵

After an initial assessment, Barno concluded that CJTF-180's campaign through the fall of 2003 represented "a very limited effort focused on the enemy."⁷⁶ For Barno, success in this approach relied on the ability of the population to tolerate Coalition operations. He believed that security operations under CJTF-180 focused too heavily on destroying the enemy and too little on winning and retaining the support of the population.⁷⁷ The overwhelmed CJTF-180 staff had ineffectively oriented to the environment, necessitating reorientation. Beginning with an assessment, CFC-A started on a series of critical changes in the way it approached the campaign in Afghanistan.

After the assessment, the CFC-A built a COIN campaign strategy based on five interagency operational concepts described as pillars.⁷⁸ The pillars included security operations and reconstruction efforts as well as enabling the Afghan security structure and regional

⁷³ Ibid., 242.

⁷⁴ David W. Barno, "Fighting the other war: Counterinsurgency Strategy in Afghanistan 2003-2005," *Military Review*, September-October 2007, 87.

⁷⁵ Spencer C. Tucker, ed., *The Encyclopedia of Middle East Wars [5 Volumes]: The United States in the Persian Gulf, Afghanistan, and Iraq Conflicts* (Santa Barbra, CA: ABC-CLIO, 2010), 196.

⁷⁶ Lieutenant General (Retired) David W. Barno, interview by Contemporary Operations Study Team, Combat Studies Institute, Fort Leavenworth, KS, 29 January 2009, 2-3.

⁷⁷ Wright, 245.

⁷⁸ Ibid., 244.

engagements. The command identified the center of gravity (COG) as the Afghan people, a shift away from classifying the Taliban and other enemy forces as the COG.⁷⁹ Figure 5 depicts the pillars.⁸⁰ CFC-A delegated responsibility for specific pillars to subordinate commands and CJTF-180 received responsibility for security operations and reconstruction efforts that supported pillars one, three, and four.⁸¹ The command and staff used targeting process as a construct to achieve effects that supported its end state and the CFC-A pillars.

The Shift to a New Approach: OEF May 2003 to April 2004

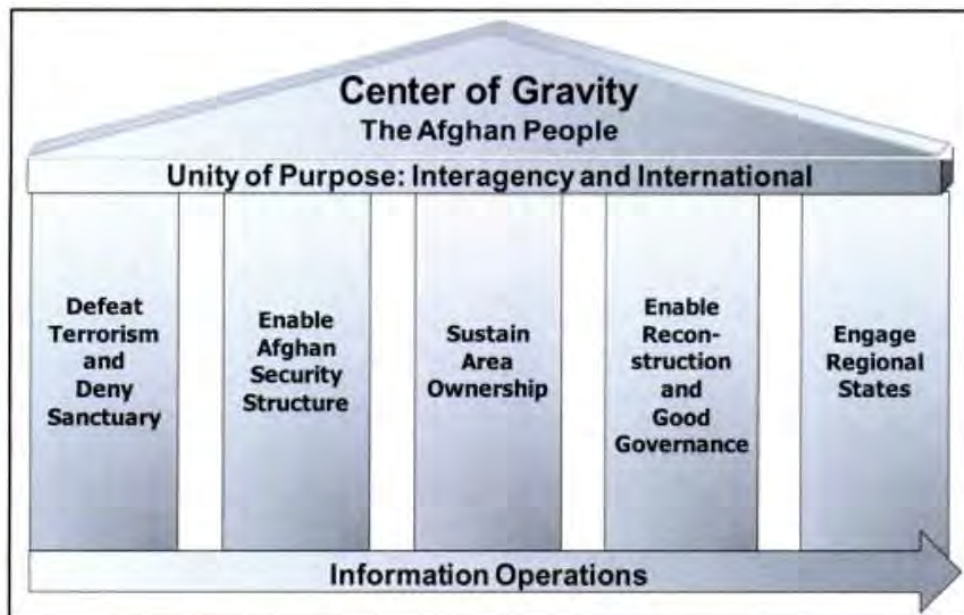


Figure 5: Pillars of CFC-A Campaign⁸²

The measurable end state sought by CJTF-180 constituted a “government of Afghanistan committed to and capable of preventing the re-emergence of terrorism on Afghan soil.”⁸³

⁷⁹ Ibid., 245.

⁸⁰ Ibid., 246.

⁸¹ Ibid., 247.

⁸² Ibid., 246.

Targeting provided updates and recommendations based on three priorities: enable Afghan institutions, help remove the causes of instability, and deny the enemy sanctuary and counter terrorism.⁸⁴ A Joint Effects Coordination Board (JECB) synchronized the lethal and nonlethal execution of the commander's intent for effects. The JECB served as a targeting board to approve targets and allocate resources to achieve targets effects throughout the area of operations.⁸⁵ A Joint Effects Working Group (JEWG) achieved weekly staff coordination and served as a targeting working group and through the Military Decision Making Process (MDMP), developed the commander's intent.⁸⁶ With the proponents established for synchronization of effects, a closer look at the targeting battle rhythm shows how the different groups within the division conducted targeting.

The targeting battle rhythm in Figure 6 depicts the three-week battle rhythm resulting in weekly fragmentary orders that refine or redirects based on the commander's guidance.⁸⁷ Each Monday, the staff incorporated changes to the operational guidance into the MDMP process. The staff then passed relevant elements produced by MDMP to the JEWG who developed operational targeting solutions for achieving the commander's desired effects. Recommended target guidance, target priorities, and objectives go before the working group. The group forwarded approved targets and priorities to the JECB for approval and publishing in the FRAGO.⁸⁸ As part of its assessment process, the JECB consolidated information and assessments from many sources to include key leader engagements, public affairs, military information support teams, psychological operations, and civil-military operations. These assessments fed into the weekly

⁸³ Robert B. Herndon, "Effects Based Operations in Afghanistan," *Field Artillery*, January-February 2004, 28.

⁸⁴ Ibid., 26.

⁸⁵ Ibid., 27.

⁸⁶ Ibid., 28.

⁸⁷ Ibid., 29.

⁸⁸ Ibid.

brief to the commander which measured the effectiveness of operations in relation to the achievement of CJTF-180 objectives. Using the D3A targeting framework as the process for achieving lines of operation and objectives—as the counterinsurgency manual suggests—prevents organizations from truly orienting and reorienting based on evolving conditions.

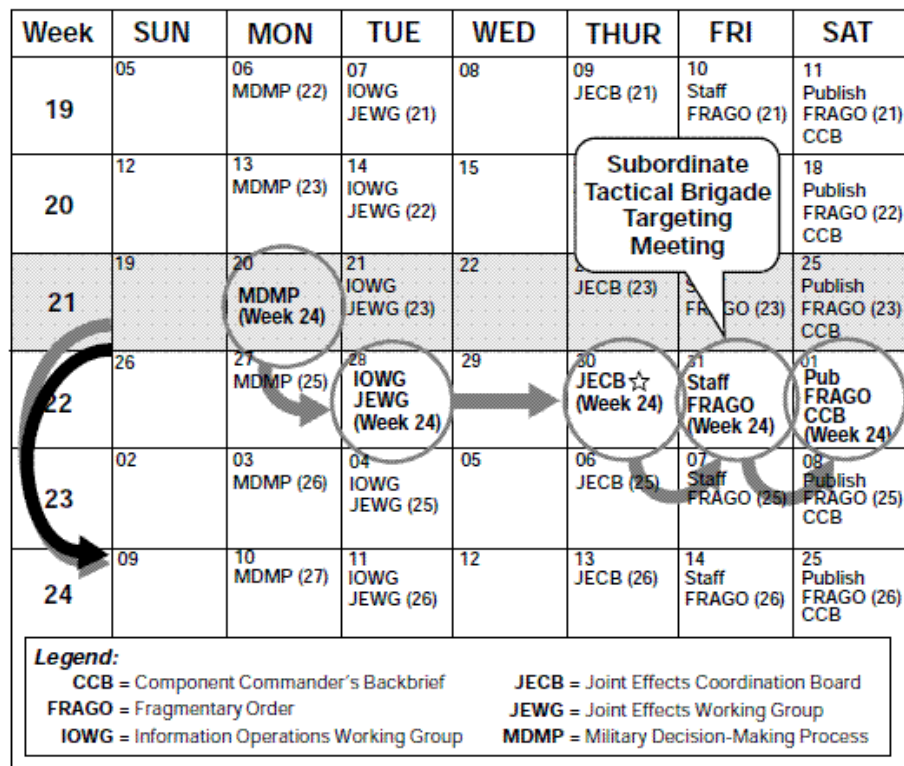


Figure 4: CJTF-180's Three-Week Battle Rhythm for EBO. This example shows the EBO process resulting in lethal and nonlethal actions to take in Week 24 that will lead to the effects to achieve the commander's intent.

Figure 6: Weekly Battle Rhythm for CJTF 180⁸⁹

At the division level, additional problems arise within organizations such as CJTF-180 that attempt centralized command and control. The problem begins with the often false implication that the organizational observations indeed represent what is actually going on. For example, the CJTF attempted to understand the level of violence through a centralized significant

⁸⁹ Ibid.

acts (SIGACTS) database. However, violence measured through a centralized SIGACTS database only measured violence directed against American forces or initiated by American forces against the enemy. Violence against civilians could not be quantified as well and even if it could, could not account for the political or psychological character of the violence.⁹⁰ An organization cannot begin to orient (OODA) or even assess (D3A) properly if they cannot observe what is actually going on. A centralized command and control structure stifles the observation process. Worse, centralized command and control structures over time develop the belief that incorrect observations represent reality, potentially masking the true problems.

After a number of visits to units in Iraq and Afghanistan, author Elliot Cohen noted that a similar phenomenon emerged among almost all of the Army units he visited. Units at the beginning of their rotation invariably reported that the situation was much worse than they had been led to believe before they deployed. Units in the middle of the rotation reported cautious optimism, while the same units at the end of the rotation reported achieving irreversible momentum. Yet, follow-on units often reported the same grim determination against daunting odds.⁹¹ Over the course of a rotation, units plan and act with more speed based on flawed observations, leading to the increased sense of momentum. Centralized command and control leads to an inability to observe, preventing orientation and pushing true problems to the next unit.

When command and control is centralized, a tendency exists to develop systems that attempt to account for all of the factors of war. Using the targeting methodology instead of the OODA loop as a construct from which to achieve lines of operation cannot properly incorporate changes in the environment. Without incorporating changes to the environment, a unit cannot properly orient.

⁹⁰ Nicholas J. Schlosser, James M. Caiella, and Marine Corps University Press (U.S.), *Counterinsurgency Leadership in Afghanistan, Iraq, and Beyond* (Quantico, VA.: Dept. of the Navy, 2011), 21.

⁹¹ *Ibid.*, 20.

In addition to command and control, Army planning doctrine also builds a construct that leads to sequential planning from higher to lower echelons. Sequential planning—as opposed to parallel planning—results in a loss of tempo. Targeting in sequential planning thus becomes decentralized and unable to develop speed relative to the enemy. Through decentralized command and control that emphasizes the initiative, CJTF-180 subordinates could have focused on exploiting changes in the operational environment in ways the CJTF staff never could. The Marine Corps offers a different model at the division level to address these deficiencies. Before looking at a Marine example, a look at the Marine Corps doctrinal foundation is necessary.

Boyd’s influence on U.S. Marine Corps Doctrine

The following section provides an overview of Boyd’s influence and interpretation into U.S. Marine Corps doctrine beginning with Marine Corps Doctrinal Publication (MCDP) 1, *Warfighting*, the 1989 Marine Corps capstone manual. As opposed to the Army, the Marine Corps consulted with Boyd while developing its doctrine.⁹² The manual specifically discusses the OODA loop and Boyd’s idea of “implicit communication” in the accompanying notes section at the end of the manual.⁹³ The latest revision, published in 1997, presents the ideas and notes in a similar fashion.

From 1996 to 1998, the Marine Corps published eight additional MCDPs to include strategy, campaigning, tactics, intelligence, expeditionary operations, logistics, planning, and command and control. Marines operate in the spirit of, and are guided by, the philosophy of

⁹² Coram, 391.

⁹³ MCDP 1, *Warfighting*, 105.

maneuver warfare articulated in the nine MCDPs.⁹⁴ These versions all remain current and represent overarching and enduring doctrine. Subordinate Marine Corps Warfighting Publications (MCWP) address evolving tactics, techniques, and procedures and remain the tool for the Marine Corps to address change.⁹⁵ Out of the nine MCDPs, five directly mention Boyd and six reference the OODA loop. While many of the manuals provide redundant interpretations, a closer look at the relevant manuals reveals the Marine Corps' interpretation of Boyd's ideas.

The seminal manual in the Marine Corps describes the Corps philosophy on warfighting and establishes the philosophy as doctrine.⁹⁶ Of all the patterns in war, the manual states that two concepts hold universal significance in generating combat power: speed and focus.⁹⁷ The manual defines tempo as speed over time relative to the enemy. The accompanying footnote cites Boyd and credits the OODA loop as the mental process for tempo and even equates the OODA loop with the "decision cycle."⁹⁸ The ideas of speed as a weapon and more importantly *relative* speed in relation to the enemy remain important and consistent in the publication and throughout Marine Corps doctrine.

The Marine Corps doctrinal publication on tactics devotes an entire chapter to the idea of "Being Faster." Major themes include speed and time, relative speed, and speed and change—the theme influenced by the OODA loop. According to the manual, in order to act consistently faster than the enemy, it is necessary to do more than move quickly.⁹⁹ A necessity to make rapid transitions arises—transitions that produce friction and a loss of tempo. Fast transitions contribute

⁹⁴ U.S. Marine Corps, MCDP 1-0, *Marine Corps Operations* (Washington, DC: Government Printing Office, August 2011), 1-3.

⁹⁵ Ibid.

⁹⁶ MCDP 1, *Warfighting*, Preface.

⁹⁷ Ibid., 40.

⁹⁸ Ibid., 102.

⁹⁹ U.S. Marine Corps, MCDP 1-3, *Tactics* (Washington, DC: Government Printing Office, July 1997), 69.

to overall speed and produce a time advantage which the manual illustrates through the time-competitive cycles of the OODA loop. The manual then states that the OODA loop helps define the word “maneuver” as “being consistently faster than our opponent.”¹⁰⁰ The importance of the relative aspect of speed becomes the central idea out of the tactics manual. Speed relative to an opponent equals tempo.

MCDP 6, the manual covering command and control, displays the largest direct incorporation of the OODA loop in any military doctrine to date. In the chapter on “Command and Control Theory,” the doctrine uses the OODA loop as the *point of departure* and specifically states that the OODA loop applies to any two sided conflict—everything from individuals fighting to large military formations. According to the doctrine, the lesson of the OODA loop is the importance of generating tempo in command and control.¹⁰¹ In other words, speed is an essential element of effective command and control. Not absolute speed, but speed relative to the enemy.¹⁰² The aim of operations is not merely rapid action, but also meaningful action.¹⁰³ With the OODA loop’s doctrinal basis for command and control established, Boyd’s other ideas influence subsequent planning doctrine.

The doctrinal publication for planning, published eight months after the publication on command and control, establishes planning as an essential component of the broader field of command and control. The planning manual even states that it should be read in conjunction with MCDP 6.¹⁰⁴ Interestingly, the planning manual only references Boyd’s “Destruction and Creation” paper and not the OODA loop. In doing so, the Marine Corps reinforcing the concept

¹⁰⁰ Ibid., 71.

¹⁰¹ U.S. Marine Corps, MCDP 6, *Command and Control* (Washington, DC: Government Printing Office, October 1996), 65.

¹⁰² Ibid.

¹⁰³ Ibid.

¹⁰⁴ U.S. Marine Corps, MCDP 5, *Planning* (Washington, DC: Government Printing Office, July 1997), Foreword.

of OODA as the basis for command and control and not an overarching concept applied everywhere.

Marine Corps targeting is the combination of art and science. The art of targeting consists of the analysis of situation to identify and go after enemy vulnerabilities. The science consists of matching targets with capabilities, pulling a target from a list and matching it with a response to generate a document such as the Air Tasking Order (ATO). The Force Fires Coordination Center (FFFC) integrates both the art and science of targeting through functional effects. The MAGTF staff process emphasizes that the targeting effort builds and takes shape with the plan and not something simply added at the end. The targeting effort evolves with the plan from the conceptual to the functional to the detailed.

The Planning doctrine instead focuses on Boyd's ideas on analysis and synthesis, and the process of creativity to which the manual calls essential to the planning process.¹⁰⁵ The subordinate MCWP that details the Marine Corps Planning Process (MCP) also only quotes "Destruction and Creation" and does not attempt to operationalize or use as a foundation the OODA loop for the planning process.¹⁰⁶ The emphasis on "Commander's Orientation" as the first step in the design effort though implies the Marine Corps understands the importance of the most critical piece of the OODA loop process.¹⁰⁷

The Marine Corps Planning Process (MCP) also incorporates the targeting effort. As the commander gives guidance during problem framing, he describes the enemy center of gravity (COG) and sets a starting point for targeting. The associated Critical Vulnerabilities (CV) at the end of problem framing provides a focus point for follow-on targeting efforts. The decisive action and supporting concept materialize during COA Development and further clarify and focus the

¹⁰⁵ Ibid., 34.

¹⁰⁶ U.S. Marine Corps, MCWP 5-1, *Marine Corps Planning Process* (Washington, DC: Government Printing Office, August 2010), 2-1.

¹⁰⁷ Ibid., 2-2.

targeting effort through the identification of specific goals and objectives. During wargaming, the staff considers the specific conditions necessary to lead to the defeat of the enemy COGs.¹⁰⁸

The targeting effort refines the associated vulnerabilities and begins to develop High Priority Targets (HPT)—those targets that produce the greatest effect for the least expenditure of time and resources while leading to the achievement of the purpose. The targeting products become input for the targeting board and inclusion in the ATO process. Figure 7 illustrates the relationship between the MEF targeting process and the Marine Corps Planning Process.

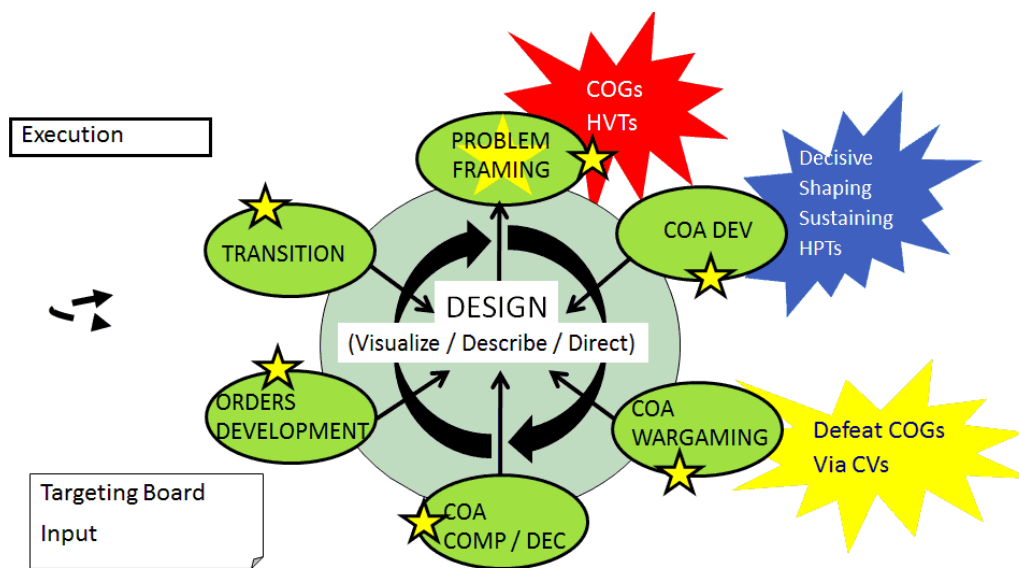


Figure 7: Relationship between MEF targeting and the Marine Corps Planning Process¹⁰⁹

Examining Marine Corps doctrine clearly shows the extensive and direct influence of Boyd’s ideas. The OODA loop establishes the point of departure for the command and control process as well as defining the mental process for tempo. The importance of the interplay

¹⁰⁸ Marine Air Ground Task Force Staff Training Program, MSTP Pamphlet 5-0.2, *Operational Planning Team Leader’s Guide* (Quantico, Virginia: MSTP Center, July 2009), 115-119.

¹⁰⁹ Marine Air Ground Task Force Staff Training Program, “MAGTF Fires” (unpublished briefing, Mar 2012), 17.

between analysis and synthesis (destruction and creation) establish the basis for planning as well. The next section examines the implementation of Marine Corps doctrine on MAGTF operations.

Boyd's Impact on MAGTF Operations – I/II MEF

From February 2006 to February 2007, the I Marine Expeditionary Force (MEF) (Forward) deployed and assumed responsibilities for Multi National Force-West (MNF-W) in support of Operation Iraqi Freedom. The II MEF (Forward) subsequently replaced I MEF and operated through early 2008. The MNF-W area of operations consisted of Al-Anbar province including the provincial capital Ramadi. Early 2006 represented a low point in the American military involvement in Iraq.

In early 2006, the I MEF headquarters replaced a headquarters that focused on combat operations against al-Qaeda. The secondary task included rebuilding Iraqi security forces in the province. During its time in MNF-W the MEF conducted eleven different combat operations conducted under the umbrella of Operation Sayeed aimed at driving al-Qaeda from the western Euphrates Valley.¹¹⁰ In Al-Anbar and elsewhere in Iraq at the time, units were moving away from the cities, concentrating their forces on big bases and working through elected governments.¹¹¹ The creation of political space through security for national reconciliation—the eventual strategic aim of the surge in 2007¹¹²—necessitated the organization to challenge the previous understanding of the problem and develop a different approach. The following section examines the OODA loop's impact on the development of the organizational approach under the I MEF and

¹¹⁰ *Al-Anbar Awakening*, (Quantico, Virginia: Marine Corps University Press, 2009), 101.

¹¹¹ Thomas E. Ricks, *The Gamble: General David Petraeus and the American Military Adventure in Iraq, 2006-2008* (New York: Penguin Press HC, 2009), 63.

¹¹² David Garner, "Strategic Aim of Iraq Surge Remains Elusive," *Financial Times*, July 6, 2010, 35.

II MEF. But first an understanding of the structure, task organization, and targeting process of the MEF proves useful, providing context to study the resulting operations.

The Marine Corps warfighting philosophy is based on a rapid, flexible, and opportunistic maneuver capability. In Al-Anbar Province, the MEF represented a Marine Air-Ground Task Force (MAGTF) task organized slightly larger than a traditional Army division, but smaller than a corps. The MAGTF is the Marine Corps' principal organization for all missions and consists of a command element (CE), ground combat element (GCE), an aviation combat element (ACE), and a logistics support element.¹¹³ However, the organizations remain flexible in structure resulting in task-organization that meets a particular mission set. While a MEF staff might normally average 150, the MEF in MNF-W numbered over 500 due to the nature of the operation and need for the additional staff. The command of the MEF further created an environment of decentralized command and control with expectations for regimental and brigade commanders to take initiative.¹¹⁴

Exasperated by their situation and lack of understanding, the I MEF decided that they needed to engage those truly in power—the tribes—and move out into the population to facilitate a better understanding.¹¹⁵ Tribal engagement harnessed the power of unity of effort, allowing a discourse between the military and the local sources of power—ultimately resulting in the Anbar Awakening. Through tribal engagement and a forward presence, the marine headquarters began to understand and deal with ill-structured problems. With the problem better understood, MNF-W possessed the tools to conduct targeting.

The targeting process remains the same for any level MAGTF both in doctrine and practice. The targeting process within the MEF begins with a centralized Force Fires

¹¹³ U.S. Marine Corps, MCWP 3-16, *Fire Support Coordination in the Ground Combat Element*, (Washington, DC: Government Printing Office, November 2001), 1-1.

¹¹⁴ *Al-Anbar Awakening*, (Quantico, Virginia: Marine Corps University Press, 2009), 234.

¹¹⁵ *Ibid.*, 149.

Coordination Center (FFFC). Although each MEF force fires sections looks slightly different, three sections comprise the FFFC. A doctrinal representation is shown in Figure 8. In I MEF, the Target Information Section ran the targeting board and the Current Fires Section oversaw the execution of the resulting plan.¹¹⁶ Due to the nature of the operation, the traditional liaison section constituted more than just liaisons. I MEF included representatives from the GCE and ACE authorized to speak for the respective commanders. I MEF also had an Information Operations (IO) cell subordinate to the FFCC.

Force Fires Coordination Center (FFCC)

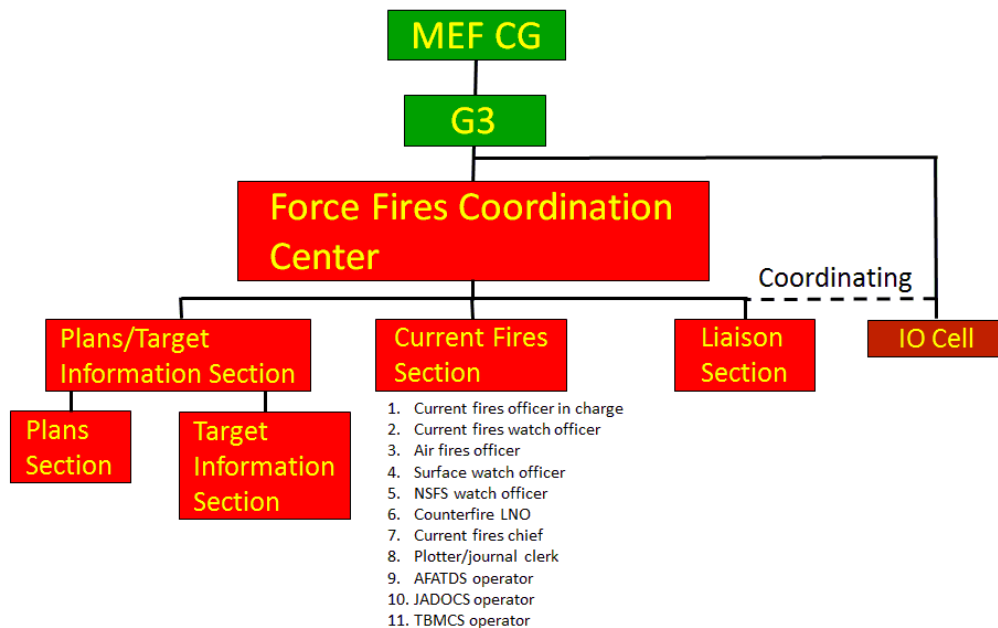


Figure 8: Force Fires Coordination Center¹¹⁷

¹¹⁶ U.S. Marine Corps, MCWP 3-40.1, *Marine Air-Ground Task Force Command and Control*, (Washington, DC: Government Printing Office, September 2005), 7-6.

¹¹⁷ U.S. Marine Corps, MCWP 3-40.1, *Marine Air-Ground Task Force Command and Control*, (Washington, DC: Government Printing Office, September 2005), 7-6.

The MEF targeting board consisted of most of the same primary staff personnel as that of the Army division as discussed earlier. However, the targeting board and targeting operational plans teams incorporate the representatives from the ground, air, and logistics elements. Representatives speak for their units in ways that liaison elements cannot. The centralized fire planning of the MAGTF targeting board allows the MAGTF to employ integrated planning between subordinate elements instead of relying on sequential planning through subordinate targeting boards.

Due to the integrated nature of the MAGTF, the targeting board also considered and leveraged additional information. As the MEF controlled its own air assets, air apportionment and an integrated, prioritized target list produced targets that meet the commander's guidance in a timelier manner generating tempo relative the adversary. The MEF serviced these targets with their own organic assets. Although the MAGTF practices integrated planning, authority is moved downward, decentralizing command and control. Continuing the trend toward decentralization of authority has been a hallmark of Marine Corps combat development. As the Marine Corps Combat Development Command states in an 2006 operating paper, "the distribution of authority among many of seasoned and well-trained junior leaders results in a combination of actions that creates for the enemy a rapidly deteriorating, cascading effect, shattering his cohesion"¹¹⁸ The MEF's subordinate units took advantages to focus on the enemy's critical vulnerabilities.

The implementation of the MEF targeting and command and control processes focused on local tribal engagement to affect and get inside the enemy's OODA loop. Through observation, the MEF identified tendencies in the operational environment. They observed and oriented on the growing concern of many Sunni groups that a U.S. withdrawal would leave them vulnerable. Tribal engagement allowed them to act on the emerging tendency of Al-Qaeda

¹¹⁸ U.S. Marine Corps, "Marine Operating Concepts for a Changing Security Environment," (Quantico, Virginia: Marine Corps Combat Development Command, March 2006), 96.

overplaying their hand. As author Everett Dolman suggests, tendency is the essence of strategy.¹¹⁹ He adds that strategy must encompass the realm of possibility and embrace the fuzzy reality of complexity.¹²⁰ Through decentralized command combined with centralized fires, the MEF task-organized to find and then exploit the tendencies.

The forces in MNF-W rose from what looked like a lost cause to what one commander described as “fundamentally changing the military and political landscape in Iraq.”¹²¹ A combination of factors such as staunch and timely support for sheiks, delivering on promises, focusing on the population as key terrain, and accepting risk contributed to this pivotal success.¹²² Instead of continuing operations in the same manner as the previous three years, MNF-W first sought to develop an understanding of the ill-structured problems in the area of operations. Figure 9 represents the conceptual framework the MEF used as a basis for understanding the problem.

¹¹⁹ Everett Dolman, *Pure Strategy: Power and Principle in the Space and Information Age* (New York: Frank Cass, 2005), 107.

¹²⁰ Ibid.

¹²¹ Sean MacFarland, Niel Smith, “Anbar Awakens: The Tipping Point,” *Military Review*, March-April 2008, 41.

¹²² MacFarland, 51.

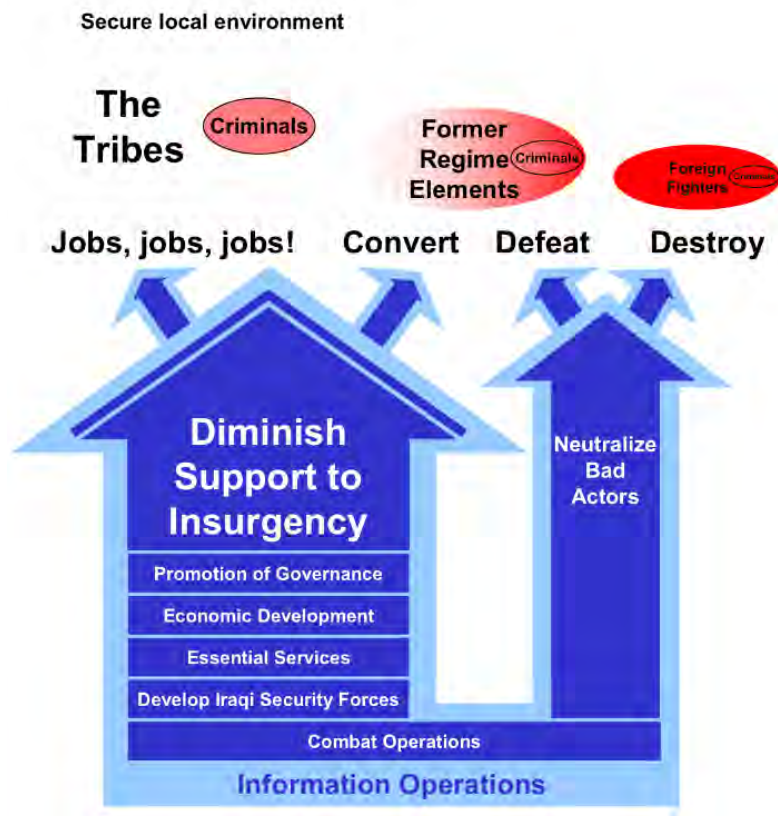


Figure 9: Marine systemic approach to operations in MNF-W¹²³

This systemic approach does not constitute a departure from Marine Corps doctrine. Marine Corps maneuver warfare remains inherently systemic in its approach. Consider the following example from *Warfighting*:

Rather than pursuing the cumulative destruction of every component in the new enemy arsenal, the goal is to attack the enemy “system”—to incapacitate the enemy systemically. Enemy components may remain untouched but cannot function as part of a cohesive whole. ... Success depends not so much on the efficient performance of procedures and techniques, but on understanding the specific characteristics of the enemy system. ... The element of local attrition is not merely to contribute to the overall wearing down of the entire enemy force, but to eliminate a key element which incapacitates the enemy systematically.

¹²³ Marine Air Ground Task Force Staff Training Program, MSTP Pamphlet 5-0.2, *Operational Planning Team Leader’s Guide* (Quantico, Virginia: MSTP Center, July 2009), 119.

The fundamental changes of approach by the MEF in Al-Anbar in mid to late 2006 created opportunities in three fundamental areas; political engagement, local security, and coalition tactics. Changes in these three areas allowed for the system emergence of the Anbar Awakening. In the tactical realm, MNF-W used traditional counterinsurgency principles combined with precise, lethal operations.¹²⁴ This created new tactics that focused on securing the populace through forward combined U.S. and Iraqi presence at combat outposts while emphasizing initiative within organizations at all levels. The Anbar Awakening improved the ability of leadership and staff at all levels in MEF to exploit the created opportunities.

According to a marine battalion executive officer serving under MEF, tribal engagement caused the enemy to begin to have to look over his shoulder wondering who was reporting on him.¹²⁵ In addition to using the OODA loop as a construct for decentralized command and control, the MEF used centralized targeting to effectively get inside the insurgent's OODA loop. The results greatly benefitted the Marines and relied upon a nuanced understanding of how Boyd intended the OODA loop.

Few examples from recent events in Iraq provide better evidence for the potential for reorienting on a system than that the Marines in Al-Anbar province. Through the process of system analysis and synthesis—destruction and creation—of the environment, the I MEF set the conditions for the Sunni Awakening. In response to an American policy shift in 2007, the II MEF again effectively reoriented in response to changing strategic aims. The MEF staff processes that incorporated parallel planning enabled orienting on changing observations.

Recognizing changes in strategic context matters, but the operational processes must translate new observations into action. As Dr. Mark Moyer of the Marine Corps University observes, the I MEF “required the exertions of excellent subordinate American field commanders

¹²⁴ MacFarland, 41.

¹²⁵ *Al-Anbar Awakening*, (Quantico, Virginia: Marine Corps University Press, 2009), 205.

who led the unrelenting military operations, oversaw the basic governance, and conducted the protracted tea-table negotiations required to convince fence-sitting sheiks to move their tribes to the American side.”¹²⁶ Through decentralized command and control that emphasized the initiative, subordinates co-opting talented and experienced Sunni elites, and helped reverse the tide of the war in Iraq’s Sunni areas.¹²⁷ Through integrated planning and centralized targeting of the MAGTF structure, the MEF focused on and generated the tempo necessary to set the conditions for success.

Assessing the Differences

While every unit—regardless of service—organizes and approaches an operational environment in a unique way, differences emerge between how the services command and control and implement the OODA loop. Differences occur for a variety of reasons to include institutional mindset, history, theory, doctrine, necessity, and resource constraints. In the study of the Army division and the Marine Air-Ground Task Force (MAGTF) represented by a MEF (Forward), three larger patterns emerge that differentiate the organizational approaches. The three patterns deal with task organization, speed versus tempo created by command and control structure, and sequential versus integrated planning.

Army divisions tend to form doctrinally, resembling each other in terms of staff size and organization regardless of the mission. Marine forces task organize specifically for the mission and view task organization as a critical component to effectiveness in a fight. The Army division places an emphasis on speed through centralized command and control. The MAGTF uses decentralized command and control with centralized firepower execution, generating tempo.

¹²⁶ Nicholas J. Schlosser, James M. Caiella, and Marine Corps University Press (U.S.), *Counterinsurgency Leadership in Afghanistan, Iraq, and Beyond* (Quantico, VA.: Dept. of the Navy, 2011), 11.

¹²⁷ Ibid.

Concurrent, integrated planning in the MAGTF between higher, adjacent, and subordinate staffs focuses efforts and generates common understanding. Sequential planning in the Army division often results in delays and gaps in understanding. A closer look at each of these patterns reveals the doctrinal reasons for the differences of approach showing how the doctrinal interpretation of the OODA loop created these patterns.

As stated earlier, the Marine Corps warfighting philosophy is based on a rapid, flexible, and opportunistic maneuver capability. The MAGTF is the Marine Corps' principal organization for all missions. The MAGTF in MNF-W in 2006 task-organized to best meet the mission set in Al-Anbar Province. The Army division in CJTF-180 operated for months with an overwhelmed and insufficient structure attempting a corps level mission. While the addition of a higher headquarters alleviated CJTF-180 of some of its higher level responsibilities, the solution failed to address the real problems of command and control within the division.

The CJTF-180 attempted to make up for its insufficient structure with an emphasis on speed. But a distorted focus that tries to reduce uncertainty through speed instead of tempo prevents the Army from getting inside the enemy decision cycle. While speed of execution is tantamount, hastening the orient phase in an attempt to get through the loop faster produces inaccurate results. In effect, CJTF-180 ended up getting inside the friendly decision cycle.

The flexible and task organized command structure of the MEF enabled the organization to process observations in a manner to better orient with respect to the enemy. The relative aspect leads into the concept of tempo. Marine doctrine and organizations use the OODA loop as the foundation for command and control while relying less on targeting methodology to achieve lines of operation. Resulting Marine operations in counterinsurgency show more initiative and higher tempo relative to the enemy.

Military staffs achieve success when all staff officers understand the meaning and purpose of coordination and habitually practice it. The MEF set the condition for this success by directly incorporating the major subordinate commands (MSC) along with red and green cells

into the integrated planning directly at the MAGTF level. The integrated planning required the MSCs and their staffs to coordinate actions with each other directly. The process results in far more integrated planning than in similar Army level organizations.

Conceptually, the U.S. Army in the past decade consciously began to shape itself for complex irregular warfare maintaining the capacity to not only conduct decisive combat operations, but also to adapt itself to the unexpected and unpredictable.¹²⁸ As former Army Chief of Staff General Peter Schoomaker puts it, “The Army’s preeminent challenge is to reconcile expeditionary agility and responsiveness with the staying power, durability, and adaptability to carry a conflict to a victorious conclusion no matter what form it eventually takes.”¹²⁹ Despite the shift in thinking, gaps emerged between the new conceptually framework and doctrine, organization, and execution.

The fast-paced, rapidly-changing nature of the current operational environment creates challenges for the targeting process. Integrating lethal and nonlethal effects to achieve the commander’s intent proves challenging. According to targeting doctrine, the targeting process is an integral part of the way Army headquarters solve problems. The D3A methodology thus becomes the mechanism for grouping tasks that need to occur and supporting lines of operation.

Once tasks are grouped, the feedback process becomes necessary to deal with new information. The continuous process incorporated into D3A of identification, attack, and assessment of the attacks “provides the commander with vital feedback on the progress toward reaching the desired end state.”¹³⁰ But as author Peter Senge argues, the traditional definition of “feedback”—to gather information about an act we have undertaken—differs from a “feedback

¹²⁸ Frank G. Hoffman, “Complex Irregular Warfare: The Next Revolution in Military Affairs,” *Orbis*, Summer 2006, 400.

¹²⁹ Les Brownlee and Gen. Peter Schoomaker, “Serving a Nation at War: A Campaign Quality Army with Joint and Expeditionary Capabilities,” *Parameters*, Summer 2004, 5.

¹³⁰ FM 3-60, *The Targeting Process*, 1-36.

process.”¹³¹ A “feedback process” means any reciprocal flow of influence and that every influence is both cause and effect; nothing is ever influenced in just one direction.¹³² The D3A process fails to incorporate a feedback process that can reorient on new information.

In the mid-1990s, then-commandant of the U.S. Marine Corps General Charles set out to refocus the Marines toward a new era marked by chaos and irregular warfare. As Frank Hoffman asserts, “The Marines have indeed been a constant force in readiness since the beginning of the Cold War, comfortably shifting between amphibious deployments and irregular warfare. They are a hybrid force, fairly comfortable with hybrid forms of warfare and multidimensional operations.”¹³³ The cultural expeditionary mindset and adaptive organizational system—the Marine Air Ground Task Force—allow Marine organizations to truly command and control in an unpredictable environment such as counterinsurgency with Boyd’s OODA loop as a foundation.

Overcoming the adversary in an unexpected and unpredictable environment requires an approach that accepts uncertainty and shifts from assuming predictable enemies to an acknowledgement of elusive enemies. The three patterns of flexible task organization, centralized command and control, and integrated planning drawn from Marine Corps doctrine are incorporated into the MAGTF structure. The patterns allow the Marines to thrive in an unpredictable environment.

¹³¹ Peter M. Senge, *The Fifth Discipline: the Art and Practice of the Learning Organization* (New York: Crown Business, 2006), 74.

¹³² Ibid., 75.

¹³³ Hoffman, 405.

Conclusion

This monograph described John Boyd's OODA loop, its interpretation in Army and Marine Corps doctrine, and compared the resulting incorporation into Army division and MAGTF level systems. The remarkable complexity of counterinsurgency operations often overwhelms these systems but the principles of the OODA loop—if used appropriately—delivers the potential of creating systems that can effectively act to create success. The difficulties faced in an Army division when using the OODA loop as a foundation for targeting in counterinsurgency operations happen largely due to failures in task organizing, creating tempo, and integrating planning. The power of the Marine Corps' use of the OODA loop as a foundation for decentralized command and control encourages creative task organization and integrated planning within a MAGTF. Effective use of the OODA loop means achieving a temporal effect relative to the enemy. Resulting Marine operations in counterinsurgency show more initiative and higher tempo relative to the enemy.

The Army traditionally organizes people for large-scale operations that are not very complex. The concept is that the organization serves to continuously collect information relative to the problem environment. Through this continuous collection of information, the organization can react faster than an opponent. However, when dealing with a complex problem, the traditional Army organization often cannot effectively task organize to orient on the collection of information.

Army doctrine and operations instead simplify Boyd's OODA loop concept and conflate the concept with D3A, distorting the true nature of the concept. A lack of orientation exists within the D3A methodology; not enough time is given to the information coming in to develop meaning. This leads to the neglect of the "orient" phase of the OODA loop—the most critical step as identified by Boyd. A distorted focus that tries to reduce uncertainty through speed instead of tempo prevents us from getting inside the enemy decision cycle. While speed of execution is

tantamount, hastening the orient phase in an attempt to get through the loop faster produces inaccurate results. In effect, Army organizations sometimes end up getting inside their own decision cycle.

Military staffs achieve success when all staff officers understand the meaning and purpose of coordination and habitually practice it. The MAGTF sets the condition for this success by directly incorporating all subordinate elements into integrated planning directly at the MAGTF level. The integrated planning requires units and their staffs to coordinate actions with each other directly. The process results in far more integrated planning than in similar Army level organizations.

Although the MAGTF practices integrated planning, authority is moved downward, decentralizing command and control. Continuing the trend toward decentralization of authority has been a hallmark of Marine Corps combat development. As the Marine Corps Combat Development Command states in an 2006 operating paper, “the distribution of authority among many of seasoned and well-trained junior leaders results in a combination of actions that creates for the enemy a rapidly deteriorating, cascading effect, shattering his cohesion”¹³⁴ Units conducting distributed operations can then use these advantages to focus on the enemy’s critical vulnerabilities.

If the process of observation-orientation-decision-action represents what takes place during the command and control process, comparing organizational execution of the OODA loop highlight the patterns of how the services approach the operational environment in counterinsurgency. Orientation—the repository of our genetic heritage, cultural tradition, and

¹³⁴ U.S. Marine Corps, “Marine Operating Concepts for a Changing Security Environment,” (Quantico, Virginia: Marine Corps Combat Development Command, March 2006), 96.

previous experiences—as the most important part of the OODA loop, shapes the way we observe, the way we decide, and the way we act.¹³⁵

¹³⁵ John R. Boyd, “The Essence of Winning and Losing,” (Briefing – June 1995), 4.

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